

# Introduction

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## Importance of Maryland's Wildlife Diversity

Maryland's landscape stretches for hundreds of miles from the mountains to the sea, supporting a rich diversity of habitats and fish and wildlife resources. Over 7,000 miles of coastline occur along Maryland's portion of Chesapeake Bay, the Coastal Bays, and the Atlantic Ocean (MD DNR 2000b, Burke et al. 2004). Nearly 8,800 miles of rivers and streams drain the state's landscape. The more than 21,000 acres of lakes and ponds and 475,800 acres of wetlands provide a wide range of aquatic habitats throughout the state. By any measure, Maryland is an ecologically diverse state with a rich natural heritage. It is especially impressive in its ability to support a tremendous variety of wildlife species.

The importance of Maryland's unique natural setting and its corresponding diversity of wildlife overall can be measured many ways. Perhaps the most significant thing to consider is that above and beyond the economic benefits associated with traditional ecological services, there is an existent and intrinsic value to Maryland's wildlife diversity that cannot be quantified (Costanza et al. 1997). It is the value of healthy ecosystems providing us with clean air, clean water, and fertile soil. It is the priceless value of a quality of life that is made available to the citizens of Maryland as a result of healthy, functional natural communities. It has been long understood that the more diverse an ecosystem is, the more resilient it will be, which is a desirable outcome given the pressures and challenges we face as a modern society.

There is of course remarkable economic importance associated with Maryland's wildlife diversity as well. From the Allegheny Plateau and the Appalachian Mountains to the waters of Chesapeake Bay and the Atlantic Ocean, wildlife-associated recreation generated \$1.7 billion in revenue in 2001 (U.S. Department of Interior and U.S. Department of Commerce 2003). Over 700,000 fishermen and 145,000 hunters contributed to nearly half that total, while the remainder of the revenue was spent by over 1.5 million participants in wildlife watching activities in Maryland. The U.S. Department of Interior and U.S. Department of Commerce (2003) reported that 38% of Marylanders participated in wildlife-associated recreation in 2001. An estimated 22% of Maryland residents are bird watchers, and over one million residents and non-residents enjoy birding in the state (Pullis La Rouché 2001). Duda and Young (1993) recorded that 93% of Maryland residents participated in some type of outdoor activity in 1993. Of these, 18% went camping, 29% went hiking, and 9% went backpacking.

While Marylanders generated \$862.7 million from wildlife-watching activities, the Total Industrial Output (TIO), which includes direct, indirect, and induced effects, totaled \$1.773 billion (Caudill 2003). The ratio of the TIO to direct expenditures in Maryland was 2.05, which means for every \$1.00 direct spending associated with wildlife-watching, an additional \$1.05 of economic activity is generated. The TIO of \$1.773 billion produced 24,667 full and part-time jobs, and generated \$29.2 million in state sales

tax and \$24.3 million in state income tax revenue (Caudill 2003). Another factor to consider is that net economic value is measured as participants' willingness to pay for wildlife-related recreation over and above what they actually spend to participate. This value increased from \$40/day in 1985 to \$66/day in 2001 (adjusted to 2001 dollars for comparison) for wildlife-watching activities by Maryland residents. In 2001, the net economic value for a Maryland resident was \$362 (Aiken and Pullis La Rouche 2003).

Not to be overlooked from an economic perspective is the Chesapeake Bay itself. It is the largest estuary in North America and is known to host over 3,000 species of plants and animals. Maryland shares the Bay with Virginia, and another four states contribute to its watershed. The world's largest population of osprey is found in the Bay ecosystem, and finfish and shellfish harvests were valued at almost \$175 million in 2001 (Pyzik et al. 2004). An increasing number of people are boating on the state's waters, with nearly half a million pleasure boats and crafts registered in Maryland and Virginia in 2001. Commercial and recreational fisheries in the state's estuaries and marine waters provide tourism and recreation, which adds significantly to the state's economy. Commercial fisheries landings add an average of \$54.5 million to the state's economy every year (NMFS Fisheries Statistics Division, personal communication February 3, 2005).

It is also important to note that over 12 million people visit the Maryland Coastal Bays and ocean coast every year, creating a \$2 billion tourism industry (MD DNR 2004c). The natural resources of the Coastal Bays provide over \$500 million in annual value to the state's economy (Greeley-Polhemus Group 2001). Nearly one million of those visitors to the Coastal Bays enjoyed wildlife observation, an activity worth \$45.1 million/year. Hunting, fishing, and crabbing in the Coastal Bays were also worth an additional \$3.5 million annually. Overall, it was estimated that 5,680 full-time jobs were supported by the fish and wildlife resources which were located within the Coastal Bays in recent years (Greeley-Polhemus Group 2001).

No matter how you try to quantify it the value of Maryland's wildlife diversity is enormous. The rich bounty we are fortunate to have stemming from our natural heritage not only functions as an economic engine, it provides us all with benefits regarding quality of life issues. Maryland's diverse wildlife resources deserve to be understood, respected, and protected.

## **Need for a Comprehensive Plan**

Maryland's invaluable natural resources face a number of serious threats. Population growth, development, and subsequent impacts including point and non-point source pollution, rising sea level, and habitat loss and fragmentation all impact and threaten the state's fish and wildlife. Numerous conservation plans to address the needs of regional habitats, individual species, or general threats have been developed. However, none of them take a statewide, comprehensive perspective that includes all of Maryland's wildlife diversity and habitats in a systems approach to long-term conservation.

The Maryland Department of Natural Resources (MD DNR) is now faced with an historic opportunity and challenge. For the first time in its near 90-year history, a new

State Wildlife Grant program is providing DNR with a unique chance to comprehensively conserve wildlife diversity. This new funding has allowed our state to develop a Wildlife Diversity Conservation Plan (WDCP). A plan that identifies those wildlife species in greatest conservation need (GCN) and focuses resources to those actions needed to conserve them and their key habitats. This is the time to proactively keep common species common and reverse the decline of rare species to prevent them from becoming endangered. Failing to do so will compromise the long-term viability of our state's diverse wildlife resources.

Looking back it is clear that DNR has a track record of success in wildlife management. Within the last century, DNR has restored the decimated populations of white-tailed deer, wild turkey, beaver, and striped bass, just to name a few. This was accomplished by applying sound scientific principles while utilizing the help of many conservation partners. Above all, restoring game species was possible because of dedicated, long-term funding from user-fees, licenses and a federal excise tax on guns, ammunition, and fishing equipment.

No such dedicated funding existed however for nongame wildlife species in the past. In fact, since 1988, donations by Maryland taxpayers to the Chesapeake Bay and Endangered Species Fund have provided the only consistent source of state funding for DNR's endangered species conservation efforts, averaging approximately \$500,000 annually. Unfortunately, these private citizen donations can not be guaranteed over time and even at current levels will not be enough going forward for the costly, last ditch efforts required when species decline to the level of needing regulatory protection. Consider also that since the passage of the federal Nongame Act in 1980, not a single dollar has been available and the act remains unfunded. In short, Maryland's historic nongame and endangered species conservation programs have severely lacked adequate funding to perform even basic activities, such as inventory, research, management, and recovery efforts.

Fortunately, in recent years the U.S. Congress has made federal funding available to the state's fish and wildlife agencies for the conservation of species of greatest conservation need (GCN). This funding source, called the State Wildlife Grant, has provided Maryland with \$650,000 to \$1,015,000 annually since 2002. One of the conditions of this new federal funding source is the development of a Maryland Wildlife Diversity Conservation Plan.

Now is the time to prevent additional species from becoming threatened or endangered and to plan into the future. One important component of the WDCP is its efforts to use the best available scientific data to determine which wildlife species are in greatest need of conservation while identifying the actions necessary to prevent their populations from declining. It is through this tool that we have the opportunity to inform important conservation partners and the greater public about how we must work together to ensure that common species remain common.

## **Purpose of the Plan**

The purpose of this document is to provide the framework and overall direction for wildlife diversity conservation efforts in Maryland for the next decade and beyond. This WDCP process identified those species and their key habitats in greatest need of conservation within the context of the full array of wildlife and habitats in Maryland. This document provides the blueprint from which to further develop, refine, and implement an effective, coordinated approach to statewide wildlife diversity conservation.

## **Background and Approach**

For over a decade the International Association of Fish and Wildlife Agencies' Teaming With Wildlife (TWW) coalition, comprised of state wildlife agencies and their governmental and nongovernmental partners in conservation, has encouraged Congressional support for new sources of federal funding to complement state wildlife conservation programs. This support came in the form of substantial annual appropriations to States under the Wildlife Conservation and Restoration Program (WCRP) and State Wildlife Grant program (SWG) in federal Fiscal Years 2001, 2002 and 2003. Under the new federal WCRP and SWG programs, Congress provided an historic opportunity for the state fish and wildlife agencies and their partners to design and implement a comprehensive vision for the conservation of America's wildlife. As a condition of SWG (FY02), each State, Territory, and the District of Columbia must complete a comprehensive Wildlife Diversity Conservation Plan (WDCP) by October 1, 2005. This WDCP will also meet the obligation under WCRP (FY01) to produce a comprehensive wildlife conservation strategy.

Maryland's WDCP represents the results of a broad and inclusive approach to compile and present the best available current information on the status of wildlife conservation in the state while involving the diversity of Maryland's public and private stakeholders. This 18-month effort required planning and research followed by iterative internal and external stakeholder input. MD DNR's Wildlife and Heritage Service (WHS) led the effort to collect the best available information and research from the many existing plans, programs and priorities to identify species in greatest need of conservation and the key wildlife habitats they depend upon. It then coordinated with local, state, and federal agencies and NGO conservation partners for input and collaboration to refine and finalize the lists. Threats were identified and conservation actions developed to address these threats to the GCN species and their key habitats using a similar process. WHS reviewed and compiled the best available information, which was then presented to public and private stakeholders for refinement and finalization.

The conservation actions identified in this WDCP represent an essential foundation for the future of wildlife conservation, as well as a stimulus to engage federal, state, local, public and private conservation partners to strategically think about their individual and coordinated roles in prioritizing state wildlife conservation efforts. The development of the WDCP at the state level is the critical first step in defining the capabilities and needs of DNR and its partners to accomplish wildlife conservation goals. This WDCP also identifies the measures that will be used to evaluate the results achieved and the threats

and needs that remain for effective wildlife conservation in Maryland. The WDCP process provides an opportunity for DNR to provide effective and visionary leadership in wildlife conservation. Strategic implementation, periodic review, and resulting adaptive management make this document a long-term tool for wildlife conservation in Maryland.